ICHTHYOSTRONGYLUS CLELANDI n.g., n.sp., FROM AN AUSTRALIAN SHARK

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SUMMARY

Ichthyostrongylus clelandi n.g., n.sp., a Trichostrongyle worm, is described from the spiral valve of *Emissola antarctica* from South Australia. The genus is distinguished from others by the shape of the head.

A number of Trichostrongyle worms were found in a tube labelled: "(1) Flukes from liver of salmon, (2) Cestodes from spiral valve of Sweet William Shark, Encounter Bay, 1/1922." There is an element of doubt as to whether the nematodes, which were very much smaller than the flukes or the cestodes, came from the salmon, *Arripis trutta*, or the shark, *Emissola antarctica*. Because of the way in which the nematodes were lying intertwined with the cestodes in thick masses of intestinal material, while the flukes were separate from these, it has been assumed that they were from the elasmobranch.

The males are up to 4·2 mm. in length, the females to 6·0 mm.; the maximum body diameter is 0·1 mm. in the male and 0·13 mm. in the female. The cuticle is very markedly striated throughout the body, even on the bursa. The head end is slightly enlarged, forming a distinctive bulb, not by cuticular inflation but by thickening of hypodermal tissues and of the anterior oesophageal muscles. The mouth is surrounded by three strongly cuticularised shallow lips, which give the appearance of a cap at the anterior end. Each lip bears two rather elongate papillae. A buccal capsule is absent. The oesophagus is straight and cylindrical and measures about a tenth of the body length. The nerve ring is very small and hard to discern; in those specimens in which it is seen it lies at the midlength of the oesophagus. The excretory pore, lying shortly behind the nerve ring, is very distinct, as its duct is strongly cuticularised.

The ovaries are opposed. The vulva lies one-fifth to one-seventh of the body from the posterior end. The ripest eggs, containing morulae, are 70 by 40 μ. The cuticle around the vulva is slightly inflated, forming a folded belt in this region.

The male bursa is tightly folded in all specimens; to examine the rays, shown in fig. 2, it was necessary to tear part of the bursa. The exact form of the dorsal ray varies slightly, the third bifurcation in some cases taking place nearer to the second than shown in fig. 2. The spicules are relatively simple for a Trichostrongyle worm; the head is provided with a ventral knob; there is a slight swelling at the midlength, and from this projects a dorsal spine. The main body of the spicule ends in two small points. The overall length of the spicule is 0·13 - 0·14 mm., and that of the simple plate-like gubernaculum 40-48 μ. There is a pair of rather elongate subventral prebursal papillae.

This, as far as can be ascertained, is only the second record of a Trichostrongyle worm from a fish. The first is *Agamonema scorpaenae cirrhosae* MacCallum 1921, renamed by Travassos (1937, 410) *Trichostrongylus* (s.l.) *maci*. Of this species, Travassos (loc. cit.) states that it was possibly an accidental occurrence. In the present case, this seems a most unlikely hypothesis. The worms are present in considerable numbers, and in a perfect state of preservation, and as they were taken from the spiral valve of the host, it is not conceivable that they were ingested with bait. The life history of this Trichostrongyle is, pre-

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sumably, similar to that of related genera in ruminants. The infective larvae might be expected to inhabit the top layer of mud or sand on the sea floor, or to be on sea weeds growing there. *Emissola antarctica* is largely a browsing shark.

I. clelandi differs from *T. maci* (s.l.) in the shape of the head, the position of the vulva, and in the disposition of the lateral and ventral bursal rays; it is not possible to compare the dorsal ray as this was not figured by MacCallum. The shape of the head is different from that of any Trichostrongyle of which the description is available to the author. In the form of the bursa and spicule it is perhaps closest to *Oswaldocruzia* Trav., differing from this genus in the shape of the head. A new genus is proposed, with the following diagnosis:

Ichthyostrongylus n.g.

Trichostrongylidae: head bulbous with three distinct and strongly cuticularised lips; buccal capsule absent. Ovaries opposite; vulva posterior but not close to anus. Spicule simple, with dorsal spine; gubernaculum present. Bursa symmetrical, dorsal lobe developed; externodorsal rays arising separately from dorsal, and lying in lateral lobes; dorsal ray dividing three times, forming six branches. Type species. *I. clelandi* n.sp. from *Emissola antarctica*, Encounter Bay, South Australia.

The specific name is for the collector of the worms, Dr. J. B. Cleland, in gratitude for his help.

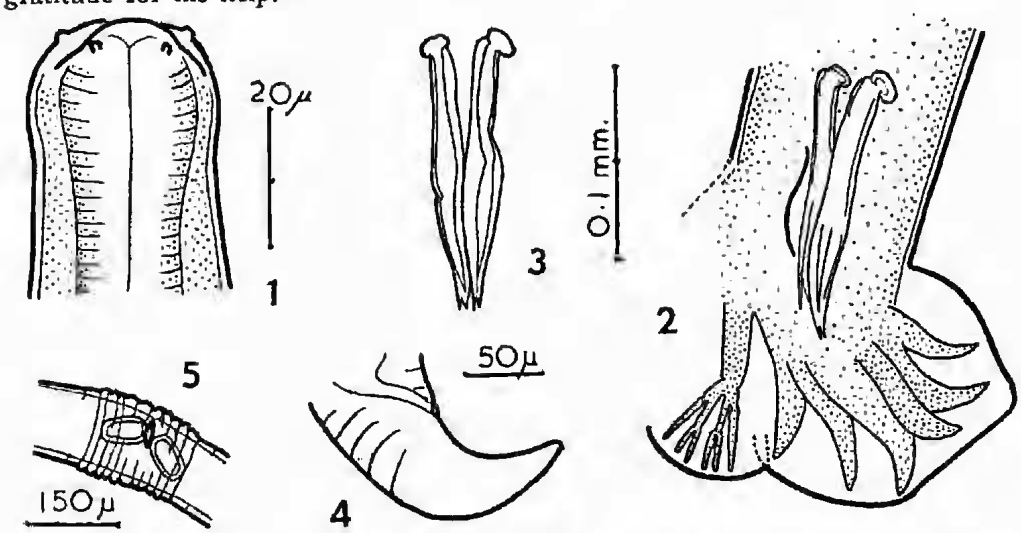

Fig. 1, head; Fig. 2, spicules and part of bursa; Fig. 3, ventral view of spicules;; Fig. 4, tail of female; Fig. 5, region of vulva. Fig. 2 and 3 to same scale.

LITERATURE

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